

## DOCUMENT RESUME

ED 347 073

SE 052 789

TITLE Natural and Man Made Objects. Operation Waste Watch: The New Three Rs for Elementary School. Kindergarten. Second Edition.

INSTITUTION Virginia State Dept. of Waste Management, Richmond. Div. of Litter & Recycling.

PUB DATE Jan 90

NOTE 15p.; For other environmental education curriculum guides for grades one through six, see SE 052 790-795. For the first edition, see ED 325 314.

PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS \*Class Activities; Environmental Education; \*Interdisciplinary Approach; Kindergarten; \*Pollution; Primary Education; Recycling; Science Activities; Science Education; \*Solid Wastes; Units of Study; \*Waste Disposal

IDENTIFIERS Environmental Attitudes; Environmental Awareness; \*Environmental Concepts

## ABSTRACT

This publication, the first in a series of seven, for elementary schools, is an environmental education curriculum guide with a focus on waste management issues. It presents a unit of exercises selected for kindergarten students to introduce the ideas of natural and man-made objects in the environment and the topics of waste and litter. Litter is cited as one problem that very young children can comprehend and solve personally. They can learn to dispose of waste properly, help recycle some items, and come to understand how their own behavior affects the environment. The activities included in this unit nurture a first step in building a sense of environmental responsibility. The unit discusses the following major ideas: (1) the environment contains both natural and man-made objects; (2) objects become waste when they are of no further use to humans; (3) litter is waste that is either made or used by people and is in the wrong place through the improper actions of people; and (4) people are responsible for disposing of waste properly. The individual activities correlate with the Virginia Department of Education Standards of Learning Objectives in Science; however, the material is designed to be interdisciplinary and may also be used to meet social science, health, language arts, mathematics and art requirements. A list of additional resources (articles, magazines, educational curricula) is included. (MCO)

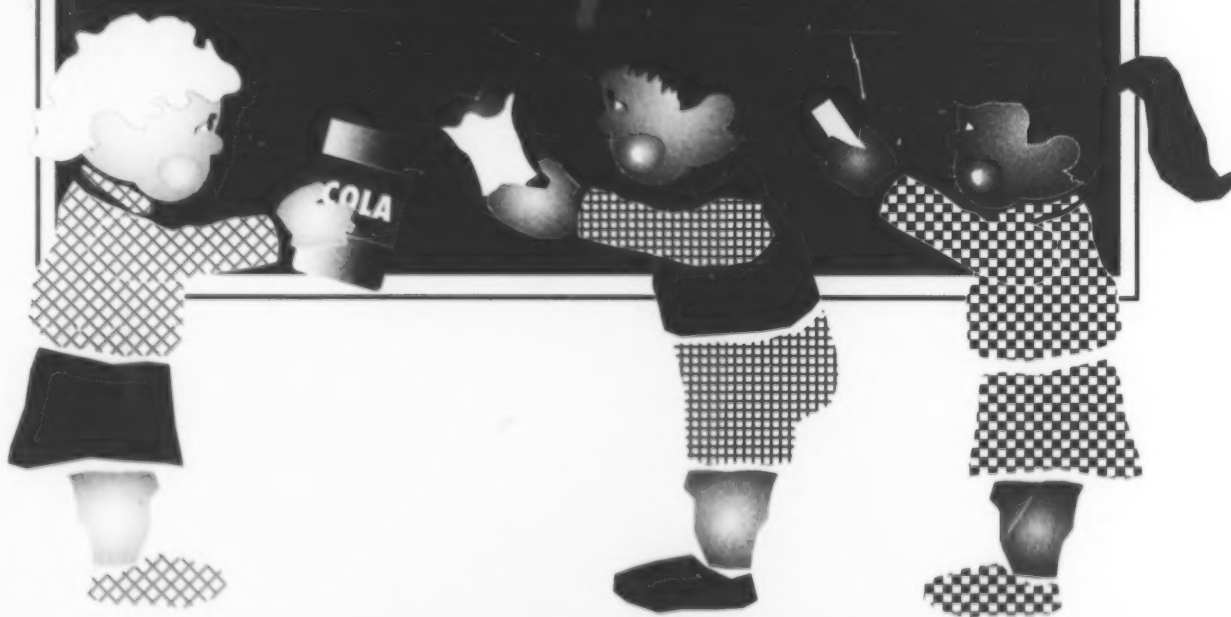
\*\*\*\*\*  
\* Reproductions supplied by EDRS are the best that can be made \*  
\* from the original document. \*  
\*\*\*\*\*

# **OPERATION WASTE WATCH:**

## **THE NEW THREE RS FOR ELEMENTARY SCHOOL**

ED347073

### **Natural And Man Made Objects**



"PERMISSION TO REPRODUCE THIS  
MATERIAL HAS BEEN GRANTED BY

Marcia R. Phillips

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC)."

### **KINDERGARTEN**

**BEST COPY AVAILABLE**

2

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

☒ This document has been reproduced as  
received from the person or organization  
originating it.

☐ Minor changes have been made to improve  
reproduction quality.

• Points of view or opinions stated in this docu-  
ment do not necessarily represent official  
OERI position or policy.

65052789

# OPERATION WASTE WATCH: THE NEW THREE RS FOR ELEMENTARY SCHOOL KINDERGARTEN

## Foreword

Ten years ago, the Division of Litter Control developed a curriculum for elementary schools called **Operation Waste Watch**, an environmental education curriculum with a focus on waste management issues. The seven grade level, multimedia units have been widely used in classrooms across the state and are considered a national model for environmental education. Each unit came with a number of peripheral teaching aids, including film strips, classroom posters, and coloring or comic books, which emphasized the theme of the unit and were designed to be taken home by the students, thereby extending and strengthening the original messages of litter control and recycling.

The instructional core of the unit was in the activity cards which presented several

lessons for class or individual participation. Each teacher could select among the activities incorporating only that material which he or she wished to use. **Operation Waste Watch** materials were designed to be interdisciplinary and may be used to meet science, social studies, health, language arts, mathematic, or art requirements. Activities in the Kindergarten level of Operation Waste Watch correlated very precisely with several of the science objectives, as well as more generally with social studies, language arts and art objectives.

This new edition of our curriculum comes in a markedly different package: a Teacher's Workbook, rather than the slip case filled with materials. Our annual surveys showed that the film strips while desired, were rarely used. The cards were hard to keep track of. The original format was never designed for refills, continual

orders, or maintaining over a period of time. Many unit components got lost or strayed. As teachers moved to other schools, **OWW** moved in bits or pieces. After ten years, it was time to update the bibliography and modify some of the activities to take into account the current state of the world of solid waste. All these conditions translate into a simpler format which will be easier to order and use. We hope you will enjoy this second edition of **Operation Waste Watch: The New Three Rs For Elementary School**.



# THE NEW THREE RS FOR ELEMENTARY SCHOOL

The theme of the kindergarten unit is **Natural and Man Made Objects**. In addition to giving exercises so the children will practice classifying natural and manufactured objects, the unit also presents students with the concept of litter and the responsibilities of proper waste disposal. Major ideas of the unit are as follows:

- The environment includes both natural and mad-made objects.
- Objects become waste when they are of no further use.
- Litter is waste that is either made or used by people and is in the wrong place through the improper actions of people.
- People are responsible for disposing of waste properly.

Litter is a very accessible pollutant which even very young children can comprehend. Although children may be able to do very little to solve other environmental problems, they can learn to dispose of waste properly, help recycle some items, and come to understand how

their own behavior affects the environment. A waste management unit is an excellent place to begin creating environmental awareness. It is a first step to building a sense of environmental responsibility.

The activities selected for the kindergarten students introduce the ideas of natural and manufactured objects in the environment and begin to deal with the topics of waste and litter. The unit emphasizes the development of scientific observation and classification skills essential to the ultimate goal of preparing young citizens to make rational decisions about personal and community solid waste disposal. By



observing and classifying objects in their own immediate environments, kindergarten students become much more aware of the waste people deal with on a daily basis.

The following activities correlate with Standards of Learning Objectives in **Science** as indicated:

---

## K.3

The student will describe an object on the basis of color, shape, texture, size, and position.

---

## K.4

The students will sort and classify objects using one variable.

---

## K.6

Students will demonstrate curiosity about the world around them.

---

## K.11

The student will describe the characteristics of living things and identify familiar objects as living or non-living.

---

## K.15

The student will demonstrate ways to conserve energy and natural resources which are commonly used.

---

## K.16

The student will demonstrate a responsible attitude toward the home and school environments by participating in a waste management program.

---

*Standards of Learning Objectives in other content areas can also be met by completing activities in this unit.*

---

## Social Studies

### K.3

The student will assume classroom responsibilities.

---



### K.4

The student will demonstrate an understanding of the rules to be followed in the school, on the playground, and to and from the school.

---

## Language Arts

### K.6

The student will acquire experiences necessary to language development and thinking.

---

### K.7

The student will demonstrate growth in visual, auditory, tactile, and kinesthetic description.

---

### K.9

The student will demonstrate growth in the process of logical thinking.

---

## Art

### K.2

The students will express personal experiences, thoughts, and feelings.

---



### K.3

The student will share personal artwork.

---

# UNIT OBJECTIVES

## Unit Objectives for Natural and Man-Made Objects are:



Students will be able to demonstrate the process skill of observing.

Students will be able to classify objects into distinguishable sub-groups.

Students will be able to identify several common natural and man-made objects.

Students will be able to identify waste and litter.

Students will recognize that waste belongs in a trash can or a litter bag.

Coloring books entitled "Good Clean Fun" are available from the Department of Waste Management to classroom teachers who order them. Contact:

Materials Clerk  
Department of Waste  
Management  
Eleventh Floor, James  
Monroe Building  
Richmond, VA 23219

804/786-8679

*LEVEL: Kindergarten  
©1991 Commonwealth of Virginia  
Printed on Recycled Paper*

# NATURAL AND MAN MADE OBJECTS

## The Beauty of Natural Objects

(SOL Science K.6; Language Arts K.7)

Throughout this unit, help the students discover the beauty of natural things. Set up a display of the natural objects used during the course of your activities, and encourage the children to bring in other things.

Show the children how to use hand lenses to examine the objects. Discuss different colors, textures, and shapes. Discuss the origin of each object. If you have an acorn, display a picture of a huge oak tree, or show the class some furniture made of oak. If you have a cardinal feather, show the children a picture of the bird, play a tape of the bird calls.

**National Wildlife Federation** has several additional excellent sources for nature education. Contact them for information on **Ranger Rick**, **Your Big Backyard**, and **Nature Scope** at 1400 Sixteenth Street, NW Washington, DC 20036.

**National Audubon Society** also has a number of useful publications. Their address is 376 Greenwood Beach Road, Tiburon CA 94920.

**Project Learning Tree** is coordinated through the Virginia Department of Education and the Virginia Department of Game and Inland Fisheries coordinates **Project Wild**. Activities in both those units will expand the students' understanding of the natural life around them.

## Classifying Objects

(SOL Science K.3, K.11; Language Arts K.9)

Place a group of no more than twenty common objects on a table where all the children can see them easily.

Be sure to include an approximately equal number of both manufactured and natural objects. Following are some suggestions:

| Natural          | Manufactured  |
|------------------|---------------|
| Shell            | Tape          |
| Pine Cone        | Key           |
| Seed             | Plastic toy   |
| Tree branch      |               |
| or leaves        | Shoe          |
| Turtle, fish, or |               |
| other pet        | Sweater       |
| Stone            | Pencil        |
| Moss             | Envelope      |
| Apple            | Beverage can  |
| Bird nest        | Glass bottle  |
| Piece of fur     |               |
| or hair          | Candy wrapper |
| Sand in a jar    | Jewelry       |
| Earthworm        | Button        |
| Mulch            | Clothes pin   |
| Pine needles     | Crayon        |
| Antler           | Stapler       |
| Tooth            | Ballpoint pen |
| Flower           | Desk calendar |
| Egg              | Spoon         |

Hold up each object and ask the children to say its name.



# NATURAL AND MAN MADE OBJECTS



Ask a few students to group the objects on the table by various characteristics, such as color, size, hardness and softness, or length.

Next ask the children what "natural" and "man-made" (or "manufactured") mean. Elicit that "Natural" are those things that exist in the world without the efforts of people, that they are of or from part of the world of nature. Natural things include all living things (plants and animals) and the things the world is made of, such as rocks, dirt, and water. Man-made or manufactured things are those objects that people or machines do make.

Help the children arrange the objects on the table into the two groups: natural objects and man-made objects.

## Listing Objects

(SOL Science K.4, K.11; Language Arts K.6, K.7)

Make two column headings on the chalkboard: **natural** and **man-made**. Have each child look around the room, name an object, and identify it as natural or man-made. Have each child touch or point to the object named. Draw a small picture of each selected object under the appropriate category.

Review the lists and ask the children to tell the primary use or function of each object. Review the definitions of natural and man-made with the students.

## More Classifying

(SOL Science K.4, K.11; Language Arts K.6, K.7)

Identify a desk or table in the room as the place to put natural objects. Have each of five children find and put a natural object on this table. Do the same thing for man-made objects.

Discuss the characteristics of each group of objects. What do they have in common. For instance, plants are one important kind of natural object, and plants are often green in color. Have the students use their senses of touch, smell, sight, hearing, and possibly taste to help describe the characteristics of the objects. If any of the objects are misplaced, have the class identify this and group the objects correctly.

Name some object not in the classroom. Ask a student to tell whether it is natural or man-made. Have students name other objects outside the classroom and ask others to correctly classify their examples.



## Going For A Walk

(SOL Science K.11, K.15; Social Studies K.3, K.4)

Take the class on a short walk around the school yard. Ask the children to name objects they see on the ground, sidewalk, or street and decide if they are natural or man-made. Keep a list of the objects and make simple drawings to place on the board later.

Ask the children to classify the objects verbally as either natural or manufactured. On the board, circle the name/picture of each natural object.

As the children look at the pictures of the natural objects, ask them to think of ways that people and the natural world can use each of the natural objects. (Tree bark and leaves can become

mulch for the garden, pebbles can be used as gravel, pine cones provide food for squirrels and birds and can be used as decorations at Christmas time.

Which man-made and natural objects belong on the ground and which do not? Several man-made or man-used objects were probably spotted which did not belong there — glass bottles, plastic containers, paper or cans. Have the children bring out the fact that the objects that don't belong on the ground are often the same objects their parents tell them to throw in the trash can at home. Things that people are finished using are called **trash** or **waste** and belong in a trash can. Have the children identify examples.

Ask the children how the trash got on the ground.

Tell the children that we call trash put in the wrong place **litter**. Write the words **trash** and **litter** on the board. Repeat the words.

Ask the children where litter belongs? Elicit as many different answers as they can come up with. Ask them, Is littering wrong? Why do people sometimes litter their trash?

## Treats

(SOL Language Arts K.6, K.9)

Pass out fruit or vegetable treats wrapped in paper or clear plastic wrap. As the children unwrap and eat the treats, discuss what uses the paper or plastic has. (Elicit both protection of food and keeping hands clean.) After the treats are eaten, ask children if the wrapper is still useful? With the class decide what should be done with the wrapper. Review with the class that waste or trash in the wrong place is **litter**.

Ask the children to discard the wrappers properly.

Have the class answer, is the wrapper natural or man-made?



# NATURAL AND MAN MADE OBJECTS



## Finding Waste

(SOL Science K.16; Social Studies K.3, K.4; Language Arts K.9)

Have class look around the room searching for littered waste objects. Ask them to find objects that are no longer useful, such as crumpled up papers, tiny pieces of chalk too small to use, used sandwich bags. Ask what use the object once fulfilled. Discuss the fact that the trash and litter are often man-made objects.

Ask the children to put any **litter** they find in the waste basket.

Place the waste basket, a trash or litter bag, glass jar, milk jug and a bowl on a table in the front of the room. Have the children decide how these are alike. Ask the children what each is meant to hold. Tell them that these are all containers. Crumple a used piece of Is it

paper. Ask the class if this is useful or waste. Throw the paper on the floor. Have the class decide whether it is litter or not. Ask a child to put the litter in the proper container.

## Drawing Pictures

(SOL Art K.3)

Ask the children to draw two pictures — one with four man-made objects and the other with four natural objects. Display the pictures in the classroom or hallway.



## Surprise Box

(SOL Science K.6, L A K.6, K.7)  
anguage Arts K.6, K.7)

Cut a fist-sized hole in the side of a covered corrugated box and decorate the outside of the box to heighten the children's awareness of it. Put several small natural and man-made objects inside the box.

Ask the children to reach inside the box with their eyes closed. Tell them to pull out three natural things and three man-made things using only their sense of touch to find them.

Check each child's mastery of the game at some point during the unit.

## Litter Bags

(SOL Science K.16; Social Studies K.3; Art K.2)

Bring in plain large lunch bags (these can be gotten in white) and have the children decorate their own litter bags with their pictures of a clean environment.

Take the children on a short walk around the school with their litter bags and ask them to point out any litter they see.

Have the children pick up the natural and man-made waste that is littered and put it in their bags, avoiding dangerous or glass objects. Reinforce with the children why people should not litter and how they can avoid littering.

Back in the classroom have the children name and classify as natural or man-made each of the pieces of litter they have put in their bags.

Have them identify where the litter came from.

Where should the man-made trash be placed?

Where should the natural waste be put? (Trash receptacle, garden, compost pile, field)

Have the children put all the useless litter in a trash receptacle. Useful natural or man-made objects that can be reused or recycled should be handled accordingly.

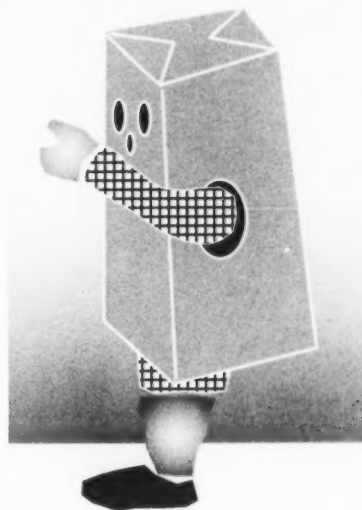
## Why Is Littering Wrong?

(SOL Science K.16; Social Studies K.4; Language Arts K.9)

Ask the children to think of places near the school building that are cluttered with trash. Reinforce the idea that trash put in the wrong place is called litter.

Discuss ways that the litter got there. Have children come up with a number of reasons why littering is the wrong thing to do.

(Possible answers: Litter is ugly; hurts people and animals; takes time and money to clean up; can cause fires, injuries; feeds and encourages rodent and insect pests.)



## Is It Trash Yet?

(SOL Science K.16; Language Arts K.9)

Some things have useful second or even third lives. Have the children decide what can be done to extend the usefulness of the following objects:

- an old magazine
- empty juice can
- empty tissue box
- pine cone
- egg shells
- cardboard box

Have the children decide, is an object trash if you can still use it for something else? How many children like to use cardboard boxes to play with? What are some of the things they make? Suggest that reuse is a good way to make things last longer, and incidentally, we could end up with less trash to get rid of.

# ADDITIONAL RESOURCES

## Articles:

Rathje, William; "Once and Future Landfills;" *National Geographic*, May 1991; published by the National Geographic Society, Washington, DC.

---

Rathje, William; "The Garbage Crisis;" *Atlantic Monthly*; December 1989.

---

"Reading, Writing, and Recycling, A Catalog of Education Materials;" *resource RECYCLING*, December 1990, published by Resource Recycling, Portland OR 97209.

---

"Recycling Makes the Grade in Schools," *Reusable News*, Spring, 1990; United States Environmental Protection Agency; RCRA Information Center, 401 M Street S. W., Washington DC 20460.

---

The Trashing of Virginia;" series of articles printed in the *Richmond Times Dispatch*; August 26-29, 1990; Richmond Newspapers, Inc.; Richmond VA 23261.

---

## Magazines:

*Garbage: The Practical Journal for the Environment*; published bi-monthly by Old House Journal Corp.; 435 Ninth Street, Brooklyn NY 11215.

---

*resource RECYCLING: North American's Recycling Journal*; published monthly by Resource Recycling, Inc.; 1206 N.W. 21st Avenue, Portland OR 97209.

---

*Waste Age*; published monthly by the National Solid Waste Management Association; Suite 1000, 1730 Rhode Island Avenue, N.W., Washington DC 20036.

---

## Educational Curricula:

*A Curriculum Activities Guide to Solid Waste and Environmental Studies (K-12)*; Institute for Environmental Education; 3200 Chagrin Boulevard, Cleveland OH 44124.

---

*Garbage In America*; Refuse Industry Productions, Inc.; P. O. Box 1011, Grass Valley CA 95945.

---

*Garbage Reincarnation: Curriculum Guide (4-6)*; Garbage Reincarnation, Inc.; Post Office Box 1375, Santa Rosa CA 95402.

---

*Let's Recycle (K-6, 7-12)*; The United States Environmental Protection Agency; Public Information Center, 401 M Street, S.W., Washington DC 20460.

---

*Mobius Curriculum: Understanding the Waste Cycle (4-6)*; Browning Ferris Industries, Inc.; 8607 Roberts Drive, Suite 100, Atlanta GA 30350.

---

*New Three Rs: Reduce, Reuse, and Recycle (6-12);* Virginia Department of Waste Management; Eleventh Floor, James Monroe Building, Richmond VA 23219.

---

*People and Their Environment (1-3, 4-6);* A conservation project of the National Council of State Garden Clubs, ©Brentree Environmental Center; Brentree Farms, Inc., Milford PA; published by Bayberry Press; Port Washington NY.

---

*Project WILD (K-6);* contact Virginia State Coordinator Suzie Gilley, Wildlife Education Specialist; Department of Game and Inland Fisheries; P. O. Box 11104, Richmond VA 23230-1104.

---

*Save It! Easy Environmental Tips to Save the Earth;* developed by Corporation for Public Broadcasting; published by Custom Print, Inc.; 2611 Shirlington Road, Arlington VA 22206.

---

*Think Earth Environmental Education Program (K-3, 4-6 available 1992);* Educational Development Specialists; Think Earth Customer Service, 5505 East Carson Street, Suite 200, Lakewood CA 90713.

---

*Waste: A Hidden Resource (7-12);* Keep America Beautiful, Inc.; 9 West Broad Street, Stamford CT 06902.

---

*Waste In Place (K-7);* Keep America Beautiful, Inc.; 9 West Broad Street, Stamford CT 06902.

---

## Other Information:

*The Fourth R: An Implementation Guide for School Recycling and Solid Waste Management;* produced by Association of Vermont Recyclers; P. O. Box 1244, Montpelier VT 05601.

---

*How to Set up a School Recycling Program;* produced by the Council for Solid Waste Solutions; 1275 K Street N. W., Suite 400, Washington DC 20005.

---

*Setting Up a Solid Waste Recycling Program in Schools;* ©J. Winston Porter; produced by McDonald's Corporation; One McDonald's Plaza, Oak Brook IL 60521.

---





Virginia Department of Waste Management  
Eleventh Floor, James Monroe Building  
101 North 14th Street  
Richmond, Virginia 23219



*Printed on recycled paper*